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quick facts on...

Modeling & Scientific Support Program

OCTOBER 2006

The South Florida Water Management District is a regional, governmental agency that oversees the water resources in the southern half of the state. It is the oldest and largest of the state's five water management districts.

Our Mission is to manage and protect water resources of the region by balancing and improving water quality, flood control, natural systems, and water supply.

2006 Key Accomplishments

- Reviewed and optimized 100% of existing water quality network, including reengineering of mercury monitoring program
- Environmental Monitoring Analysis and Planning System – web-based tool to see where and what type of monitoring already exists



The Regional Simulation Model (RSM) simulates on a computer the complex hydrology of South Florida. It will allow water managers to evaluate, plan and implement their operations under most any climatic and hydrologic conditions.

District programs depend on scientific support and computer modeling for all aspects of water management. This program centralizes these major functions.

As recommended in the Strategic Modeling Plan, this program includes the development, implementation and migration of the next-generation Regional Simulation Model (RSM) to replace current regional models; the implementation of the Capability Maturity Model (CMM) for all model development and implementation; and modeling oversight, peer review, scope review, model library and data set creation.

This program also includes water quality monitoring and assessment operations. Water quality monitoring systems track ecosystem status and the performance of District projects, including information needed to meet legal

Program Goal

To provide technically sound modeling and scientific services in support of District water resource programs

and regulatory requirements. Activities included are regional-scale water quality monitoring, laboratory operations, quality assurance/quality control, data stewardship, and associated support services. An Environmental Monitoring Coordination Team has been established to manage and oversee all District monitoring activities. This program is also responsible for the annual production of the South Florida Environmental Report – which provides scientific and engineering status and findings.

In addition to the milestones shown over the 10-year time frame, this program has significant annually recurring activities:

- Maintaining and continuously improving Standardized Modeling Protocols starting in 2008 using CMM processes and standards
- Applying the RSM for priority District program needs starting in 2008
- Maintaining Library of Models starting in 2008
- Maintaining the RSM starting in 2009
- Maintaining Level 3 CMM in all modeling practices starting in 2009
- Producing the South Florida Environmental Report
- Conducting water quality monitoring in compliance with legal mandates and permits
- Supporting the Everglades Technical Oversight Committee and Settlement Agreement
- Coordinating management and stewardship of Enterprise Scientific Data
- Supporting Office of Counsel during environmental litigation proceedings to facilitate restoration efforts

Strategies

- Ensure District-wide coordination of modeling and monitoring using the Modeling Oversight and Environmental Monitoring Coordination teams
- Develop a standardized modeling methodology based on CMM principles and develop new models, including RSM, using that methodology
- Create a library of peer-reviewed models and standardized datasets
- Continue implementing recommendations from FY2006 water quality monitoring optimization studies and reviewing the efficiency and integrity of the regional water quality monitoring networks
- Implement the approved 2006 Laboratory Operations Plan and update every 5 years
- Complete and implement a District water quality strategic plan, which includes a 5-year plan for water quality monitoring
- Provide centralized oversight of the District's data stewardship program
- Continue to consolidate reporting into the South Florida Environmental Report
- Maintain District lab certification and demonstrate laboratory performance through round-robin studies
- Validate all contracted laboratory analyses prior to inclusion in the DBHYDRO database
- Continue to improve provision of analytical services to internal clients
- Implement a quality assurance program for all District monitoring activities

Success Indicators

- Implementation of RSM, including Level-2 CMM standard and peer review by 2006
- Migration of RSM to replace 2x2 model by 2007
- Use of standardized datasets for modeling by 2007
- Universal use of peer-reviewed Library of Models by 2008
- Implementation of CMM based methodology by 2008
- Compliance with all legally mandated monitoring requirements
- Value-added benefits from development and implementation of new scientific technologies and process improvements
- Development and use of consistent standards, processes and procedures for enterprise-wide data stewardship
- Submittal of the annual South Florida Environmental Report by March 1 each year



Environmental scientists monitor and assess water quality to track ecosystem status and performance of projects, including information needed to meet legal and regulatory requirements.



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sfwmd.gov

South Florida Water Management District
3301 Gun Club Road
West Palm Beach, Florida 33406
561-686-8800 • FL WATS 800-432-2045
www.sfwmd.gov

MAILING ADDRESS: P.O. Box 24680
West Palm Beach, FL 33416-4680

SERVICE CENTERS

Big Cypress Basin/Naples
 239-597-1505
 Broward
 954-713-3200
 Florida Keys (Plantation Key)
 305-853-3219 or 800-464-5067
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 863-462-5260 or 800-250-4200
 Orlando
 407-858-6100 or 800-250-4250
 Palm Beach County
 561-682-2283 or 800-432-2045